

ARIZONA SILVER BELT.

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GLOBE, GILA COUNTY, ARIZONA, THURSDAY, MAY 3, 1900.

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THE MINING FIELD.

A Brief Portrayal of the Mining Industry of Arizona and the Great Southwest.

MINE AND MILL---SHAFT, CHUTE AND TUNNEL.

PROGRESS BEING MADE BY PROSPECTOR AND PROMOTER--THE MINING INDUSTRY THROUGHOUT THE GLOBE COPPER BELT--A WEEKLY RESUME OF TRANSPIRING EVENTS TERSELY TOLD.

OLD DOMINION.

The Old Dominion Copper Mining and Smelting company has made excellent progress since smelting was resumed on April 9, although it will take some time yet to thoroughly reorganize the mine force. The company is in need of first class miners, and, in fact, capable men can always find work here. The output of copper is satisfactory and the record for the month promises to be a very good one. In contrast with the recent paucity of coke shipments, there is now a redundancy of furnace fuel at the smelters, which the enlarged bin-room is insufficient to hold and the surplus of coke has been piled up along the railroad spur back of the smelter. Superintendent Parnall informs us that another No. 7 Connorsville blower (duplicate of the one now in use) is expected to arrive within a few days, and two new rectangular furnaces will be shipped from Milwaukee this week. Mine work has been somewhat retarded by a lack of experienced miners, but the supply of ore is sufficient and the mine is looking well. At the Continental the company has sent about 600 tons of ore, and is still developing a very large body of iron ore.

PINTO CREEK M. & S. CO.

Superintendent George Calder of the Pinto Creek Mining & Smelting company, informs us that he has let a contract to James and Ed. Whelan for a 300 foot tunnel on the Yo Tambien mine. The tunnel is expected to intersect the ledge at a depth of 160 feet and pass under the shaft at 250 feet from the surface.

The Black Warrior Copper company started up their leaching works on Monday last, and all of their tanks, fifteen in number, are now in operation, with promise of a successful run.

RUSH AT THE SAMPLING WORKS.

The Globe sampling works have been crowded with ore since starting up, and running under pressure, which has kept everybody connected with the works hustling. Manager W. S. Andrus says the past week was the busiest week he ever experienced. Two carloads of ore were shipped to El Paso and a third is ready to go out.

SILVER KING.

W. H. Lampker was over from Silver King on Tuesday. He is one of the pioneers of this section, having lived in Globe district and at Silver King for the past twenty-five years. He worked at the Mack Morris mill during Maj. Baldwin's regime. Mr. Lampker informed us that the Silver King company are working a force of 14 men and taking out fine ore from the 80 foot level, which they are shipping to El Paso. He thinks the King mine is destined to regain some of its former reputation as a silver producer. Mr. Lampker has four tunnel sites and a group of nine silver and copper claims, located a quarter of a mile above the Silver King, which he is developing.

TO BEGIN DEVELOPMENT.

Dr. O. H. Bachman, of Minneapolis, Minn., has been here ten days, representing the American Mines Development company, who have taken a bond on a group of fine copper claims near the divide between Pinto and Mineral creeks, which are owned by Richard Welch. Dr. Bachman expects to put a force of men to work on the property within a few days.

TURQUOISE IN GLOBE DISTRICT.

Dr. T. C. Stallo brought to this office for our inspection, last Tuesday, about ten pounds of turquoise from the mines of Stallo & Oleovich, situated about eight miles west of Globe. This last sample is from the south drift from the bottom of the 24 foot shaft on the Stallo No. 1 claim, and much of it is of fine color, showing marked improvement over the turquoise taken out nearer the surface. Dr. Stallo is greatly encouraged by the showing and believes he will open up one of the best turquoise mines in this country. He has shipped about 90 pounds of turquoise to his partner, Bernard Oleovich, of San Francisco, who is an expert and dealer in precious stones, and rare mineral. Messrs. Stallo and Oleovich have three claims, Stallo No. 1, Ida No. 2, and Ruth No. 3. The principal development is on the Stallo claim, and consists of a shaft 24 feet deep with drifts north and south; also two shafts each 10 feet deep and an open cut 24 feet long and 8 feet in depth.

A NEW DEAL AT TROY.

J. H. Willington was here yesterday from the Troy camp, between Dripping Springs and Riverside. We understand that the deal made for the Troy mines with Boston parties, through Mr. Cutting, and which failed of consummation owing to the failure of the Globe bank, of Boston, has been renewed, and a new bond on the properties is to be given, the papers having been received here from Boston. A large amount of development work was done on the mines under the original bond, and the showing is said to be very good.

E. H. Cook, superintendent of the United Globe mines, went to El Paso on Monday, for the purpose, it is supposed, to make final arrangements for ore shipments to the El Paso Smelting company.

J. J. Windmiller, financial agent of the company operating the Copper Hill mines, was here during the week and paid off the employees on May 1, as it will not be convenient for him to return on May 10, the regular pay day.

Wm. Stevenson returned a few days since from a visit to the mining claims owned by Mr. Shoemaker and himself adjoining the town of Kelvin. The Arizona Blade says they have had careful tests made of their ore, and the average was from 12 to 18 per cent copper and a fair per cent of gold and silver values. They intend to develop the properties before putting them onto the market.

Territorial and General Mining.

The Crowned King mine in Yavapai county, has been partially closed down. Development continues and it is thought the full force will be at work again in a short time.

A great body of lead ore has been struck in the De la Fontaine mine at Stockton Hill. The strike is one of the biggest ever made on Stockton Hill, says the Mohave Miner.

Prof. George Tredwell was at the Spenazuma mine near Fort Thomas last week and examined the property. His opinion has been given to the Spenazuma company but as yet has not been made public.

Col. J. W. Ellison writes to a friend here, says the Holbrook Argus, that he has discovered some rich ore out in his neighborhood (near Pleasant Valley, Gila county) and has staked out a lot of claims. The ore contains gold, silver and copper.

Information received from Bisbee is to the effect that the Lake Superior Development company has struck a good body of ore in the Irish Mag mine, bonded from Martin Costello. The shaft is down a little over 300 feet.—Prospector.

J. H. Hise is erecting a five stamp mill on his mining property in Placeritas district, for the purpose of prospecting the properties, says the Journal-Miner. In case the properties in which the work is being done prove to be what is hoped for them it is the intention to put in a forty stamp mill.

The earliest knowledge of copper in the southwest was from Mexicans, who in the latter part of the last century discovered the Santa Rita mines in New Mexico, near the town of Silver City. The Mexicans called these mines Creadera del Cobre, the place where copper was created, the native metal cropping out of the ground. Massees a ton in weight were extracted and shipped to the City of Mexico to be coined into copper money. In 1838 the Apaches drove out the miners, and not until 1873 was mining resumed under American management.

We have been informed by reliable authority, says the Journal-Miner, that Mr. Barkdall is soon to arrive from Chicago and begin operations again with the large steam shovel in the placer fields near Walnut Grove. This immense piece of machinery, which with all its equipments, cost in the neighborhood of \$100,000 and which has been lying idle for some time, will handle about one ton of dirt per minute and with a force of from twenty to fifty men makes it possible to handle, with a profit, dirt that goes as low as ten cents in gold to the cubic yard.

Mr. Payne, secretary of the King of Arizona company informed the Tucson Star that the water problem had

been fully solved, that 150 men were at work and that 100 tons of ore was crushed and cyanided daily. The returns run on an average of \$1,000 per day and Mr. Payne incidentally alluded to the fact that the \$2,000 mark had been reached. The King is a Yuma county mine, but Tucson is the business headquarters of the institution, with Colonel Epes Randolph still at the head and the Consolidated National the depository for the revenues of the big concern that has just been released from the courts, a victory well won.

A rich strike is reported to have taken place within the past few days, says the Journal-Miner, in the Shyllock mine, in Black Hills district, owned by Henry B. Clifford & Co. The vein of ore has been cross-cut at a depth of about 175 feet and a body of ore nearly eight feet across, running a good per cent in copper and silver, has been encountered. The strike is considered by those who have seen the ore and the amount of it, to be one of extraordinary value, and will undoubtedly develop into a veritable bonanza. The mine is located only a short distance from the Yaeger canyon mines, owned by Judge R. E. Sloan and others.

The Hancock Copper Journal prints a letter from W. B. Carlyle, superintendent of the Rio Tinto mines in Spain, and formerly in this country, written to an American friend: "This is a monster. There are 135,000,000 tons of ore in sight, of which we must extract 2,000,000 tons this year. We have a very good railroad 375 miles long, with 30 locomotives on the main line and 50 at the mine, and this year we will handle 5,000,000 tons of ore. There are very extensive underground works. The other day down on the 1200 foot level, I was shown a solid body of ore 600 feet wide. There are 10,000 Spaniards at work. We only pay here from 50 cents to 85 cents per day.

The circumstances and surroundings of a mine or mining region often have more to do with its prosperity than the intrinsic value or richness of its ore, says the Mining & Scientific Press. This factor enters into "mine values" and the report of a mining engineer. In one locality 830 ore may be low grade and profitless; in another more favorably situated as regards transportation, mills and main centers, \$10 ore will be of value. The prominence that Colorado deservedly occupies is largely because of the admirable system of railways in that state, penetrating anywhere and everywhere that there are any indications of mineral wealth. In Colorado the railroad keeps just behind the prospector.

Good reports come from the Dennison-Wakefield copper discovery at Pinal, a good body of high grade carbonate of copper ore has been uncovered, and there is every indication that the discovery is one of more than usual value. Here is another practical illustration of the fact that the industrious prospector is just as apt to make a good strike in an old and abandoned district, as he is in a new field. This find is only about three miles from the old Silver King mill, and it would probably be no exaggeration to say that hundreds of prospectors, in days gone by, have broken rock on the surface of this claim without striking their picks into the right spot. No district is too old to be prospected intelligently and industriously.—Arizona Blade.

It is reported upon what seems good authority that there is to be a 38-ton jacket put on Gun creek, 10 miles from Payson, by Messrs. Forsyth and Hurst. These gentlemen went into the Tonto Basin country February 15 and located 13 claims, for copper, silver and gold. April 19 they passed through Jerome on their way to San Francisco to purchase the plant. Mr. Forsyth was formerly chief of police in Santa Monica and Mr. Hurst is a recent arrival from Honolulu, both said to be men of means. Assays showing results in copper from 20 to 40 per cent is said to have induced the Standard Oil people to make an offer for the property. Workmen will be taken from Jerome to build the smelter.—Jerome Reporter.

With gold bullion of the value of over \$400,000 in his custody, Capt. P. B. McKoon, who operates the big bullion train between De La Mar's Nevada mines and the end of the Utah and Pacific company's track at Nevada, arrived at the Oregon Short Line depot yesterday and transferring his precious cargo to the Union Pacific, will leave for the south again today. Just what period or what tonnage was required to produce this result could not be learned at the office, but it is said to have represented considerably less than a month. While but little information is to be had during the absence of the owner concerning the behavior of the bonanza from which more than \$5,000,000 has already been derived by the Captain, the mill is handling an average of 9,000 tons monthly.—Tribune.

We would like to know why it is, says the Mohave county Miner, that so many mining companies, composed usually of men of good business ability in any other industry, take it for granted that a mine or mill can be run "any old way" and with anybody more or less incompetent as superintendent or foreman? Half the failures today can be traced to the fact that men are placed in charge of a mining enterprise who know absolutely nothing of the requirements of the position, and consequently fail and the mine gets the blame. Whenever the time comes that mining companies select their men to run a mine as carefully as they do for any other business then there will be less failures to chronicle in an industry which is now recognized as legitimate and safe an investment for capital as any other business or trade.

The day of gophering and so-called mining in this territory is a thing of the past. Men have found that this don't pay and legitimate mining is becoming universally the rule. They realize that capital must have something sure in return, and in order to sell a mine to business men it must be developed. It is purely a simple business proposition, where something can be measured up and sold. A ledge, no matter how much value it carries, no matter how rich it makes individuals or corporations, if it cannot be presented in something like a business manner it certainly cannot secure extended recognition from business men. Mining men recognize this fact. They are setting about to put their properties into shape readily presentable to any buyer. Deep mining, indeed, is receiving favorable recognition throughout the territory, and in a few years it may readily be expected to be the rule.—Prescott Prospector.

The United States mining law, in terms, confines the right of location of mineral lands to citizens of the United States or those who have declared their intention to become such. It does not necessarily follow that the acquisition of an unpatented mining claim by an alien, either by purchase or location is void. On the contrary, the title of an alien, to such land is only voidable and while of record in the alien the land covered thereby is segregated from the public domain. A claim so held does not, ipse facto, escheat to the Government, and third parties cannot invest themselves with the right of the government to the extent of dispossessing an alien of his holdings. The question of alienage cannot be raised collaterally, because the paramount title to the land is in the United States, and a third party has no right to complain, in a collateral proceeding, if the government does not enforce its prerogative. The question of the right of an alien to hold an unpatented mining claim being properly raised, its effect may be avoided by the naturalization of the alien at any time before judgment in judicial proceeding or final action by the department in patent proceeding, as naturalization is of a retroactive effect, so as to be deemed a waiver of all liability to forfeiture and a confirmation of title.—Mining & Scientific Press.

The Tombstone Prospector is informed that the Copper Queen Co. at Bisbee have opened up a very rich body of ore in their new working shaft; that they are now sinking upon the Spray mine. The fact that they have struck any ore of consequence in their shaft, is of itself astonishing, for the company chose the spot upon which this shaft was started, because it was believed that after much surveying, by their very competent corps of engineers, they would encounter no ore here. They desired to have solid limestone all the way down, for the obvious reason that the shaft would be, and remain more substantial than if sunk in ore that might afterwards be worked out from around the timbers and interfering more or less with the alignment of the timbers of the shaft. The shaft is now down to a depth of 550 feet and is virtually a four compartment shaft being 24 feet in length and about eight feet in width. At this depth the entire shaft is in a very rich bed of copper ore that runs 50 per cent and over; the ore being principally an oxide. Out of this five feet of ground the value of the copper taken out is \$7,000 to say nothing of the value of the other metals that may be in the ore. We have been credibly informed that this ore is also very rich in silver. This, we believe, when everything is considered, is the richest strike of the Copper Queen, and this is saying a great deal, for the Copper Queen mines at Bisbee are in the first rank of the bonanzas of the world, a fact that but few people know. This a further proof, also, of the tremendous possibilities of the wonderful copper producing limestone belt at Bisbee. The shaft is about three-fourths of a mile south or nearly so, of the Copper Queen smelters.

AMERICAN COPPER

Montana, Michigan and Arizona the Three Great Copper Districts.

MARVELOUS INCREASE OF PRODUCTION.

ARIZONA'S PRODUCTION SHOWS THE GREATEST PROPORTIONATE GROWTH DURING THE PAST FIVE YEARS. THE DISTINCTIVE DIFFERENCES IN THE MINES OF THE THREE DISTRICTS.

The following is an extract from an address by A. R. Ledoux:

The production of copper in America from 1845 to 1890 amounted in round numbers to 1,000,000 tons. Prior to 1880 Lake Superior produced nearly the whole quantity, but from 1880 to 1890 Montana and Arizona began to compete with the Lake region, and the figures for that decade are: Lake Superior 45 per cent, Montana 36 per cent, Arizona 15 per cent, elsewhere 4 per cent. In 1890 Montana passed its rival, the figures for that year being: Lake Superior 38 per cent, Montana 43 per cent, Arizona 15 per cent, elsewhere 4 per cent. The following production shows the increase in production in the last five years. It is stated in pounds and in round numbers:

LAKE.		
1895.	1896.	1897.
129,000,000	143,000,000	145,000,000
MONTANA.		
1895.	1896.	1897.
158,000,000	155,000,000	150,000,000
ARIZONA.		
1895.	1896.	1897.
216,000,000	232,000,000	237,000,000
LAKE.		
1895.	1896.	1897.
47,000,000	72,000,000	81,000,000
MONTANA.		
1895.	1896.	1897.
111,000,000	122,000,000	122,000,000

Broadly speaking, the metallic mines are confined to Lake Superior, the sulphide ores have received their greatest development in Montana, and the oxide ores are characteristic in Arizona.

The Lake Superior ores carry the copper in an almost chemically pure form. The metal is disseminated through lavas, sandstones and conglomerates, sometimes in masses, but usually in tiny specks—the average assay of the district being less than 4 per cent of copper, but the distribution is uniform and the average sure. The Calumet & Hecla has paid its shareholders over \$65,000,000 since 1871, and has produced nearly 1,500,000,000 pounds of copper. The ore is raised from twelve shafts, one of them over four-fifths of a mile in vertical depth. Five thousand tons are hoisted daily an average distance of 3000 feet. The cost of Calumet copper laid down in New York in the form of wire bars or ingots probably does not exceed 6 cents per pound. In the Tamarack, another Lake mine, the deepest shaft is 4,000 feet, and will soon reach a mile in vertical distance from the surface. The Lake Superior ore admits of simple treatment. It is pulverized in steam stamps, each handling hundreds of tons in a day. When pulverized and automatically screened and separated into several grades of fineness it passes to jigs and concentrating tables or buddles. A jig is practically a sieve plunged up and down in water. The finest ore in size goes to tables over which a stream of water flows—the lighter and worthless gangue being washed away, while the heavier metal remaining upon the table is caught or diverted into another direction. While the ore of the Calumet probably averages 1 per cent copper, there are other mines that have phenomenal records of economic working. Among these is the Atlantic. In 1898 it produced 4,500,000 pounds of copper, yielding the company 11.83 cents per pound. The average of the ore was about six-tenths of 1 per cent or a value of \$1.40 per ton of ore raised; mining costs 90 cents, transportation 5 cents and milling 24 cents. The total operating expenses, including freight and commissions, were \$1.3481 per ton. The copper, therefore, cost 9 cents a pound, giving a net profit of nearly three cents. This record is not equalled in any other copper mine.

The so-called mountain system of veins is characteristic of the Rocky Mountains and Sierra Nevada, and receive their greatest development in the vicinity of Butte, Mont., so far as sulphide ores are concerned. The Butte mines are complex. There is no "bed" corresponding to the Calumet conglomerates, but sulphides are interspersed in bunches or otherwise through altered granites. The Butte district is seven miles by four in extent, but the mines that have made Butte famous underlie an area of about 3000 to 7000 feet. The Butte mines—

many of them—were started as silver propositions, the altered surface ores being rich in that metal. As depth increased rich ores grew somewhat more scarce, but at the depth of today, from 1500 to 2000 feet the grade is quite uniform—in the neighborhood of 6 per cent copper is the average of the camp. In the early days the Butte mines used to ship ore to sampling works in New York which contained over 50 per cent copper. All the Butte ores contain gold and silver as well as copper. The Anaconda has produced 1,000,000,000 pounds of copper, 50,000,000 ounces of silver and 150,000 ounces of gold. This copper mine is the largest silver producer in the world. From 3000 to 6000 tons of ore are daily mined from the Anaconda. The Anaconda supports the surface by the introduction of a forest of 60,000,000 feet of lumber yearly. The ore is carried twenty-seven miles to the metallurgical works which reduce it. The difference in the treatment as compared with the Lake Superior is due to the fact that in the first case they have only metallic copper to separate, refine and remelt into wire bars or ingots, while the sulphide ores contain a larger proportion of impurities than Lake copper, the principal impurities being sulphur and iron, although arsenic, antimony, bismuth and other undesirable substances, including tellurium, are usually present. The metallurgy of the Butte copper ore, therefore, consists of several stages: First, the concentration to separate the sulphides from the granite or other gangue; second, roasting to get rid of the greater part of the sulphur with its accompanying volatile impurities; third, the smelting of the roasted sulphides to form matte; fourth, the so-called bessemerizing of the matte to produce impure copper, and finally the refining of this impure copper.

The ores of Arizona and of the southwest in general are of the carbonate or oxide type as far as the surface ores are concerned, remembering, of course, that only general terms are being used, and that in every district as well as in every mine there are more or less of all types of ore. In Arizona there has never been any glacial erosion which has removed the oxidized ores with all the decomposed rocks of the surface in our northeastern states and in many parts of the Rocky mountain range. These oxidized ores always overlie sulphides when they have not been artificially removed. As a type of the carbonate and oxide mines of the Southwest, the Copper Queen is worthy of attention. This mine was opened in 1880, and a small furnace operated on its ore that year. Today it has become one of the largest mines in the world, with some 20 miles of shafts, tunnels, galleries and levels, and ore in sight capable of yielding 3,000,000 pounds of copper per month for many years. The occurrence of the Copper Queen's and similar ores is in limestone, and in this rock they are deposited in eccentric and curious ways. Bodies of ore are come upon without the slightest indication of warning, and equally without warning they suddenly disappear. From barren rock, showing no trace of copper, a drill will sometimes enter a cave of great extent, the sides and walls being magnificent with blue, red and green copper stalactites, and underneath large bodies perhaps containing thousands of tons of rich ore. In the Copper Queen there are today cubes of ore blocked out on all sides that exceed 400 feet on the edge. Up to 1884 this mine produced 29,000,000 pounds of copper from a body of ore which was then exhausted. Another bonanza was discovered, from which the mine is still taking out millions of pounds of copper a month, and with no indication of immediate exhaustion. The surface ores of these carbonate mines could be smelted without bessemerizing or roasting, producing in the furnace by one operation black copper equivalent to the converter bars and suitable for the electrolytic separation, but, with depth, sulphides came in, and now the Copper Queen also is bessemerizing mattes and producing converter bars which go east for their electrolytic refining. The metallurgical works of the Copper Queen are most thoroughly modern in every respect. They use the trough converters previously mentioned, holding about 30 hundred-weight of matte which assays 33 per cent copper. These converters are 8 feet long by 6 feet in diameter.